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HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute, please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

Treasurer, N.M.D. Historical Fund
Bureau of Medicine and Surgery (Code 23)
Department of the Navy
Washington 25, D. C.

Committee

W. DANA, Rear Admiral (MC) USN, Chairman
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Policy

The U.S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor are they susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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"Lineal Positions"

With respect to one of the several career incentive measures implemented for medical and dental officers, a great many inquiries have been received in the Bureau concerning the promotions, readjustments of running mates, and revision of the lineal list of medical and dental officers which resulted from implementation of Public Law 497. Particular concern has been shown by those who found themselves junior to doctors who had previously been below them on the lineal list. There was apparent contradiction in gaining seniority with respect to line running mates and losing numbers on the list of medical officers.

While the detailed application of the law to individual situations is beyond the scope of this note, a general explanation of the provisions, method of implementation, and results may be helpful.

The law provides for four years of constructive service for physicians and dentists upon graduation from medical or dental school, and an additional year for medical internship.

In applying this provision equally to all doctors on active duty, all gained; but some may appear to have gained more than others. Medical officers originally commissioned in different periods had received varying amounts of constructive service credit, depending upon the administrative rulings in effect at the time, but none had received as much as the four (or five) years' credit provided by the new law.

In applying the new law, sufficient constructive service was granted to each doctor to insure that the total constructive service for each equaled the full 4 or 5 years provided by law, and in the cases of dentists, 3 years.

Public Law 497 makes constructive service effective "upon graduation from medical or dental school." Therefore, the exact date of graduation plays an important part in fixing the original date of rank. For medical

officers who entered the Navy directly from medical school and have continued on active duty with no failure of selection for promotion, the procedure may be simply stated: He has as running mate the junior unrestricted line officer whose date of rank as ensign was four years earlier than the doctor's medical school graduation date, and who has been on continuous active duty and not passed over. Thus, a doctor who entered the Navy for internship in July 1950 after graduating on June 7, 1950, would have as running mate the junior line officer whose date of rank as ensign was June 7, 1946; or if no line officer had such a date of rank as ensign, the junior man of the next earlier date.

Obviously, the doctor whose graduation date was June 10, 1950 might get a running mate junior to the doctor who graduated three days earlier; or they might both get the same running mate if no line ensign had a date of rank between June 7 and June 10, 1946. Since the June dates chosen for graduation ceremonies by various medical schools have no bearing on relative merits of their graduates, it might seem that this is a haphazard method for determining dates of rank. As a matter of fact, the ultimate promotion possibilities are affected more by other factors than by the method of assigning dates of rank. When line officers are being promoted rapidly the small differences in medical officers' dates of rank will have little effect; and when line promotions are retarded, staff officers' promotion will be slower. Under some conditions there will be variations of time in grade for staff officers irrespective of the method used for selecting running mates. The graduation dates do serve as a basis for constructing a lineal list of medical officers and while this method is admittedly arbitrary, it is the legal method; and alternate methods also included features that were equally arbitrary.

For purposes of simplicity the example chosen above was that of a doctor who entered Navy internship immediately after graduation and has continued on active duty since that time. Variations from this pattern produce exceptions in computing dates of rank. For instance, each failure of selection for promotion reduced constructive service credit by one year. Time after graduation not spent on active duty was computed as follows: First two years, full credit; next eight years, three-fourths credit; additional years, six-sevenths credit. All time spent on active duty is, of course, given full credit. These provisions were applied uniformly to all doctors on active duty in readjusting their dates of rank. In a few instances discrepancies have been discovered in which classmates from the same school who entered the Navy together were given different dates of rank. These discrepancies resulted from erroneous graduation dates being reported by one or both doctors involved. Other individual cases could be cited with explanations for exceptions, but it is believed that the general information given herein will explain most situations.

The net result of the readjustment of dates of rank in accordance with the provisions of Public Law 497 is that doctors junior to captains of

July 1, 1955 gain extensively in seniority. It is true that some doctors lost a few numbers with respect to their medical or dental officer classmates, but at the same time they generally gained hundreds of numbers with respect to line running mates, and it is the latter feature that bears primarily on promotion. It is regretted that inversion of lineal position for some officers was necessary in order to realize the full benefits of the law. Avoidance of the inversion, however, would not have improved the running mate position of the officer involved, but would have prevented those below him from obtaining the benefits to which they were entitled under the law. (Bureau of Medicine and Surgery)

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New Concept of Familial Adenomatosis

Recent literature has suggested that there is an association between familial adenomatosis and additional growth abnormalities. This disease has long been recognized, the first description being variously accredited to Menzel in 1721 and Virchow in 1863. It is characterized by a diffuse adenomatous involvement of the colon, a heredofamilial incidence and a close relationship to cancer of the large bowel. It is a distinct disease entity and is to be differentiated from postinflammatory polyposis and non-familial discrete polyps of the colon.

Multiple sessile or pedunculated proliferations of the mucous membrane of the entire colon are found. Often, there is a predilection for the terminal bowel and, rarely, the involvement is segmental. The stomach and small bowel may occasionally be similarly involved. The polyps vary in size from a few millimeters in diameter to obstructing tumors several centimeters in diameter. The proportion of sessile and pedunculated polyps can be correlated with the duration of the disease, the sessile polyps being noted during the early phase of the disease and the pedunculated type being seen later in the course of the disease.

Although all of the genetic aspects of the disease are not completely clear, it is believed that the adenomatous proliferations of the intestinal mucosa represent a gene mutation. The altered gene is usually inherited as a nonsexlinked Mendelian dominant, and affects 50% of the succeeding generations. Because in one-half of the reported cases there has been a failure to demonstrate a familial history, the mutated gene may also be transmitted as a recessive trait. Under the latter circumstances, the hereditary factor in isolated cases of otherwise typical diffuse polyposis may not be recognized. The tendency of the polyps to undergo malignant changes has been long recognized and constitutes the rationale for aggressive surgical treatment. A review of reported cases shows that most patients with familial adenomatosis will, if untreated, die of carcinoma of the colon before the age of 50.

In spite of an accumulation of considerable literature on the subject, concepts of familial adenomatosis have changed little during the second quarter of this century. However, several recent articles have challenged the scope of the syndrome as classically described. Gardner, while studying a family group with intestinal polyposis, noted two additional and associated manifestations of abnormal growth. He called them, collectively, "surface tumors," and noted they were of a "hard" and a "soft" variety. The former were bony exostoses and the latter epidermoid cysts, fibromas, or ill-defined masses of connective tissue. Six family members demonstrated all three manifestations of abnormal growth: polyps of the colon, exostoses, and soft tissue growths. More than one type of soft lesion was usually seen in each patient. In several members of the family, surface tumors were noted prior to the recognition of the polyps of the colon, and in additional members of the family, they were present in the absence of familial adenomatosis. Gardner believed that the polyposis and the associated growths were manifestations of a single dominant gene.

The ideal approach to the management of cancer is one of prevention. That familial adenomatosis lends itself admirably to the practice of cancer prevention is attested to by the statement of Scarborough that "probably no benign process has a higher incidence of malignant degeneration than polyposis." Familial adenomatosis begins as a benign process and develops into carcinoma of the large bowel if the patient survives long enough and the lesions are not detected and removed in their premalignant phase. In those so affected, the polyps characteristically undergo malignant changes at an early age and the changes are often characterized by a multifocal malignant degeneration.

Because of the mildness of the early symptoms of the disease, the patients, unfortunately, do not present themselves for examination and treatment until a number of years have elapsed. The usual symptoms of diarrhea, passage of blood and mucus, and attacks of cramp-like abdominal pain result in their being treated for prolonged periods for nonexistent hemorrhoids, colitis, amebiasis, and other intestinal disorders. The frequency with which an invading malignant lesion is already present when the patient first applies for treatment is discouraging and approximates 40%. In many whose diagnoses are so delayed palliative surgery alone is all that is practical. In a few, the finding of associated malignancy does not necessarily exclude curative surgery, for in cancer of the bowel the relatively slow rate of growth and late metastasis serve to enhance the rate of operability.

A correct and early diagnosis can be made if a strong suspicion of polyposis is entertained and the appropriate studies are instituted in evaluation of suspicious gastrointestinal symptoms. When a rectal polyp is detected, a study for additional polyps is mandatory. When cancer of the colon is diagnosed, a careful study for associated adenomas should be made. If multiple polyps are detected and if they are of a noninflammatory type,

a great responsibility is placed on the physician, for he must undertake an exhaustive study of relatives in order to detect the existence of polyps of the colon while still in a premalignant phase. The diagnosis cannot wait for establishment of a picture of large bowel dysfunction. That the relatives are apparently asymptomatic does not exclude the existence of polypoid disease.

Familial adenomatosis is considered to be a disease of adolescence and early adulthood, the average age for appearance of the polyps being 20 years. Although polyposis is usually manifest by the end of the third decade of life, youth or senility should not exclude a family member from an adequate investigation. Four children were reported to have familial adenomatosis prior to two years of age, the youngest being a four-month old infant. Of the eight patients that died in the series of McKenney, four were 24 or under, the youngest being a 15-year old boy who developed a rectal perforation at the site of a necrosing carcinoma. The frequent need for examination of children arises from the fact that affected persons are usually well along in their reproductive life when the disease becomes clinically manifest. The average age at death is approximately 20 years younger than that from cancer of the rectum and colon in the general population. Death from malignant degeneration has occurred past the fifth decade, and Strode reported the finding of familial adenomatosis in a patient aged 70.

To find a relative free of adenomas does not exclude him from further examination, as the adenomas may appear in subsequent years. A planned program of periodic reexamination of all members of the family will afford a practical and rewarding means of preventing cancer.

An associated existence of multiple congenital anomalies is well known. Hereditary multiple exostosis is one of the most frequent hereditary malformations of the skeletal system. Sebocystomatosis represents another congenital malformation and both, in common with familial adenomatosis, develop gradually during and following childhood. All three are usually inherited as Mendelian dominant traits and are incompletely or nonsexed linked. All represent a disturbance of the normal growth patterns, the first two, a disturbance of the glands of the colonic mucosa and skin, and the other, in common with tumors of connective tissue origin, a disturbance in growth of mesenchymal tissue.

From reports enumerated from the literature, plus the authors' observation, it is suggested that patients with familial adenomatosis demonstrate an unusual mesenchymal tissue behavior. This may appear early and be manifest as fibromas, fibrosarcomas, leiomyomas, or exostoses, frequently in subcutaneous, mesenteric, or retroperitoneal locations. In other patients, the abnormal tendency appears only in response to injury and takes the form of intra-abdominal fibrous adhesions or connective tissue growths at the sites of operative trauma.

It is suggested that, with the finding of one of the above mentioned growth abnormalities, a detailed personal and family history be obtained,

directed toward detection of gastrointestinal symptoms. Even in their absence, it is believed that a diagnostic survey should be undertaken to rule out the coexistence of familial adenomatosis. The finding of such growth abnormalities in the absence of polyposis might be suggestive of the inheritance of the abnormal gene with the examination being performed in a stage prior to the appearance of colonic adenomatosis. Under such circumstances, the possible significance of the future appearance of gastrointestinal symptoms in the patient or his family should be made known. (Gumpel, R. C., Carballo, J. D., A New Concept of Familial Adenomatosis: Ann. Int. Med., 45: 1045-1056, December 1956)

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Prophylaxis of Rheumatic Fever

Group A streptococcal infection initiates acute rheumatic fever; rheumatic valvular heart disease is a sequela that develops during or subsequent to the acute rheumatic episode. The mechanism by which the preceding streptococcal infection produces the arthritic and constitutional symptoms and valvular heart disease is unknown. Regardless of the mechanism involved, there is little doubt that prevention of the streptococcal infection eliminates acute rheumatic fever and, presumably, rheumatic heart disease in any population group. This fact has guided the management of a selected group of individuals, namely, those patients who have already had one attack of rheumatic fever. The continuous prophylactic administration of a sulfonamide drug or penicillin is a widely practiced measure for insuring freedom from streptococcal infections and rheumatic recurrences.

The American Heart Association has made recommendations for the control of rheumatic fever that are summarized in a table. Minor changes in the methods employed in prophylaxis and treatment of streptococcal infections undoubtedly will be made as experience accumulates. For example, the duration of protection afforded by various doses of benzathine penicillin has not been determined nor has the daily oral dose of penicillin prophylaxis been finally established. Recent evidence indicates that 1,200,000 units of benzathine penicillin will protect against streptococcal infections for 6 weeks and 900,000 units for 4 weeks. Likewise, oral penicillin probably should be administered in doses of 200,000 units twice daily to insure adequate prophylaxis.

It appears unlikely that major revisions in these recommendations will be made unless new data become available that invalidate previous conclusions. Recently, serious doubts have been raised as to whether successful treatment of streptococcal infections does indeed prevent valvular heart disease. In addition, some physicians have questioned the desirability of continuing prophylaxis for life in those individuals who have experienced one

or more rheumatic attacks. The present discussion reviews some of the data and considerations presently available regarding these two aspects of the problem of rheumatic fever.

The results of these studies indicate beyond doubt that successful treatment of the preceding streptococcal infection decreases the frequency of acute clinical attacks of rheumatic fever. Analysis of the failures to prevent acute rheumatic fever by the treatment of the preceding streptococcal infection with one of the antibiotic drugs showed that any form of treatment that did not eliminate the infecting organism was not satisfactory. Thus, in those individuals with streptococcal infections whose organism was not eliminated by therapy, the attack rate of rheumatic fever was not appreciably different from that observed in patients receiving no therapy. The importance of the living streptococcus in the production of acute rheumatic fever is also emphasized by the fact that sulfadiazine, a bacteriostatic agent, does not eliminate the organism when administered to patients with streptococcal pharyngitis and does not decrease the attack rate of acute rheumatic fever.

In order to plan a rational method of management of the patient who has experienced rheumatic fever, the physician should be acquainted with certain epidemiologic features of streptococcal infections and rheumatic fever. Group A streptococci are maintained in nature in the upper respiratory tract of man. The most dangerous source of infections is the carrier who has recently acquired the organism. Because streptococcal infections occur frequently in the young school-age child, any situation that places the individual in contact with children increases the risk of infection. The organism is transferred to the susceptible host by intimate contact and not by droplet nuclei, contaminated dust, bedding, and other articles.

Although adults apparently acquire fewer streptococcal infections than children, it is probably a fallacy to believe that this is due to acquired resistance. Immunity in man is type-specific and relatively long enduring. Because most adults probably have had experience with only a few serologic types during childhood, they should become infected if adequately exposed to a carrier harboring a new type of streptococcus. Experience in military populations shows that young adults are very susceptible to these infections when assigned to an installation experiencing an epidemic.

A rational method of management of the rheumatic patient cannot be established unless susceptibility to recurrence can be defined in relation to other factors, such as age, period of freedom from activity, and the role of streptococcal infections.

Rheumatic recurrences occur in adult life in spite of freedom from activity for many years and the risk of recurrent activity in adult life following a streptococcal infection is high. Therefore, the risk of a recurrent attack of acute rheumatic fever in adults depends primarily on effective contacts with a carrier of the group A streptococcus. Thus, estimation of the risk of recurrence of rheumatic fever is an individual problem and the decision as to how long prophylaxis should be continued must be based on

many factors. In the opinion of the authors, it is mandatory to continue prophylaxis as long as the patient is in school or serving in the armed services. Likewise, the adult, especially the parent who is exposed to children, should be protected. Those whose occupations demand intimate exposure to many people undoubtedly experience an increased risk. In contrast, a chauffeur-driven executive who is exposed to few people other than his secretary and other chauffeur-driven executives, has less opportunity to contract infection. These variable and individual factors must be considered by the physician in making the decision as to how long prophylaxis should be continued in an individual patient. To rely on antibiotic treatment of a streptococcal infection is not sufficient because many are inapparent or cause few symptoms and therapy does not prevent all recurrences. In addition, there is still some doubt whether therapy of the respiratory infection prevents cardiac damage. Therefore, prophylaxis should be maintained indefinitely except in those few individuals in whom the risk of contracting a streptococcal infection is negligible. (Mortimer, E. A. Jr., Rammelkamp, C. H. Jr., Prophylaxis of Rheumatic Fever: Circulation, XIV: 1144-1151, December 1956)

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Studies on the Anticoagulant Phenindione

The use of phenindione (P. I. D.) clinically as an anticoagulant has stemmed from the original findings in animals that indanediones possessed prothrombopenic properties. Clinical reports suggest a superiority over bishydroxycoumarin because control is said to be achieved with greater facility as a result of quicker and more transient effect. The finding that Vitamin K₁ Emulsion rapidly reverses the effects of phenindione on the coagulation mechanism enhances its potential usefulness. This report, based on the routine use in two hundred hospitalized patients, confirms the impression that this preparation, when properly administered, may be used safely and with facility. The properties of P. I. D. in relation to its clinical use are also described.

Two hundred consecutive unselected hospitalized cases to whom phenindione was given were reviewed. Treatment was initiated and maintained by the resident and intern staff of the Medical and Surgical Services of the Boston City Hospital. The management was based on an information sheet supplied to the personnel which outlined dosage, contraindications, and suggestions in regard to routine observation. The dose recommended after initial trial of various schedules was set at 200 mg. followed by 100 mg. in 12 hours. After this priming dose, the daily dose was adjusted to the prothrombin time so that the latter was kept between 26 and 36 seconds. A history inquiring particularly into bleeding tendencies, renal or liver

impairment, and gastrointestinal lesions was asked for, as well as a control prothrombin time, NPN, stool, and urine. In compelling circumstances, the drug was given without these control laboratory procedures and, consequently, sometimes in the presence of what had, heretofore, been considered contraindications. Daily prothrombin times and biweekly stools and urines were requested during treatment.

The diagnosis of phlebitis, pulmonary embolus, congestive failure, peripheral vascular disease, and acute coronary insufficiency was based on the usual clinical criteria.

The search for a satisfactory anticoagulant has proceeded for over one and one-half decades and was originally stimulated by the clinical use of heparin and bishydroxycoumarin; later, several related coumarin derivatives, e.g., Tromexan, Warfarin, and Coumopyran were added to the list of materials available for clinical use. The objectives raised to the cost and necessity of parenteral administration of heparin are matched in the case of bishydroxycoumarin by the slowness, cumulative effect, and long period of action which have resulted in fatal hemorrhagic episodes. This study deals entirely with details of the clinical use of P.I.D. and indicates some superiority over Dicumarol only as a result of the more rapid onset and dissipation of its effect; but bleeding and cumulative effect can be shown to be present and must be expected as a calculated risk. In subjects under 70 years of age, without renal, hepatic, or hematologic complications, without local conditions favoring bleeding (e.g., gastrointestinal ulceration, indwelling catheter, et cetera) and not severely ill or depleted, a very low incidence of bleeding can be expected. In more severely ill, over-age patients with shock, debilitation, hepatic, renal, or gastrointestinal diseases, a fairly high incidence of hemorrhage can be expected. But if the subjects are followed carefully, P.I.D. can be administered with reasonable safety in the presence of many conditions which would contraindicate the use of Dicumarol. Although bleeding can be expected, it has been the slow variety and never a serious emergency per se. Omission of the drug, decrease in dosage, or even Vitamin K₁ Emulsion administered intravenously are adequate to cope with the situation. The importance of routine stool and urine examination is re-emphasized in this regard. (Sise, H.S., Moloney, W.C., Guttas, C.G., Studies on the Anticoagulant Phenindione: Am. Heart J., 53: 132-143, January 1957)

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Pseudohypoparathyroidism

Pseudohypoparathyroidism is a familial disease of metabolism in which the parathyroid glands are apparently normal in structure and function, but organ response to the parathyroid hormone is abnormal. The condition was first described by Albright and his colleagues in 1942. The chief feature

distinguishing it from other forms of chronic hypoparathyroid tetany is the lack of response to parathormone. The diagnosis can be suspected from radiographic study of the hands and skull.

Elrick, Albright, et al., in 1950, collected 14 cases and emphasized the following features of the disease:

1. Clinical and laboratory evidence of chronic parathyroid insufficiency; tetany without evidence of renal disease, steatorrhea, or generalized osteomalacia. Despite these findings, patients show little or no response to parathormone.
2. Shortening of metacarpal and metatarsal bones.
3. Clinical picture of shortness of stature, thickset appearance, round facies, mental retardation, and short stubby fingers.
4. Soft-tissue calcification involving the basal ganglia and subcutaneous tissues.

Hypoparathyroidism is most commonly seen following thyroidectomy, after inadvertent or unavoidable removal of the parathyroid glands. Spontaneous or idiopathic hypoparathyroidism is a rare disease. Albright recognized the occurrence of two forms of this latter condition when he found that certain cases failed to respond to large doses of parathormone. These cases are designated pseudohypoparathyroidism.

The Ellsworth-Howard test, which consists in the intravenous injection of parathormone and subsequent urinary phosphorus determination, thus becomes an index of end-organ response. In normal individuals and in cases of hypoparathyroidism other than pseudohypoparathyroidism, urinary phosphorus excretion is increased following parathormone injection. In pseudohypoparathyroidism, there is no appreciable rise in phosphorus excretion.

In an excellent review of the literature and critical analysis of previously reported cases, Macgregor and Whitehead, in 1954, pointed out the fallibility of the Ellsworth-Howard test in the diagnosis of pseudohypoparathyroidism. They emphasized the specificity of the osseous and soft-tissue changes and concluded that "chronic tetany, together with brachydactylia and the characteristic metacarpal or metatarsal changes, or with ectopic calcification or bone formation," is "undisputed proof" of pseudohypoparathyroidism.

The age has varied between seven and forty-nine years in the majority of cases, although the condition has been reported at sixteen months. Awareness of the syndrome should allow earlier recognition. Patients ranged in age from five and one-half to twenty-nine years. Although five of the six were females, Macgregor and Whitehead found no significant sex variation in the present series. It is interesting that four of the six patients were Jewish.

Symptomatology is related predominantly to episodes of hypocalcemia. Tetany, with manifestations of stridor, muscular hyperexcitability, tonic

convulsions, tingling, and cramps of the extremities, is seen at some time in every patient with this disease. Other findings of significance are mental retardation, delayed and defective dentition, cataract formation, and the characteristic round face and short stocky appearance. Older persons may show immobile facies and posture suggestive of Parkinson's disease.

It is evident that pseudohypoparathyroidism is a familial disease with three components: first, the metabolic defect, manifest as a failure to respond to parathormone; second, bone dysplasia; third, extraskeletal calcification and ossification.

The roentgen findings of short metacarpals, thickened calvarium and extraskeletal calcification, singly or in combination, in patients with symptoms of parathyroid insufficiency should suggest the diagnosis of pseudohypoparathyroidism. (Cusmano, J.V., Baker, D.H., Finby, N., Pseudohypoparathyroidism: Radiology, 67: 845-852, December 1956)

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Stein-Leventhal Syndrome and Endometrial Carcinoma

In 1935, Stein and Leventhal first described a syndrome consisting of menstrual irregularity featuring amenorrhea, a history of sterility, a masculine type of hirsutism, obesity, and, less consistently, retarded development of the breasts. The ovaries were similarly and simultaneously enlarged as the result of typical cystic changes that were irreversible and refractory to therapy with hormones. The condition did not appear to be congenital in origin or on an inflammatory or degenerative basis. It did possess many of the features of a genuine endocrine disturbance. Since this original contribution, numerous articles have appeared reporting on single instances or on small series of patients with the condition. A number of possible theories regarding etiological factors have been explored and discussed.

This article reviews the clinical and pathologic features of a group of patients with this syndrome who were seen at the Mayo Clinic. Special emphasis is placed on the frequent association of endometrial carcinoma occurring as a late manifestation of the syndrome—an aspect that, heretofore, has been somewhat neglected.

Although the syndrome under discussion is relatively uncommon, Stein recently has been able to report on a personal series of 88 patients treated by means of wedge resection of the ovaries. The series of Meaker (65 cases) and of Ingersoll and McDermott (29 cases) are sizable. The authors believe that more and more cases will come to light with growing recognition of the Stein-Leventhal symptom complex. A considerable amount of searching was required before their series of 43 cases was assembled out of a miscellany of clinical and pathologic diagnoses.

This study adds no pertinent evidence to support or disprove the three current theories regarding the etiological factors, namely, pituitary hyper-secretion, deficiency of luteinizing hormone, and distortion of the ovarian spiral arteries. In the neoplastic category, 9 cases exhibited ovarian hilar rests consisting of Sertoli-like cells or Leydig-like cells or both. Benson and co-workers observed these rests in the hili of normal ovaries and the authors have noted them in a control series. Geist and Gaines have reported luteinization of the theca cells as being suggestive of increased gonadotropic stimulation. The ovaries studied exhibited pronounced hyperplasia of the theca interna, but no great tendency toward luteinization. The authors were impressed with the apparent tendency of large numbers of follicles to proceed along the lines of ripening without being able to achieve maturation. Whether the cystic degenerative changes resulted in overcrowding of the ovary, with secondary alterations in the vasculature and nutrition of the cortex leading to fibrosis, could not be determined.

While it is obvious from the experiments of Van Wagenen and Morse that mere resection of one-third of the ovarian cortex should not deplete ovarian function, it is perhaps more difficult to understand why such an operation gives relief from the syndrome under discussion. Perhaps reduction of the ovarian "target area" promotes better pituitary-ovarian hormonal balance, as expressed by the views of Bailey, Stein and Leventhal, and Novak, as applying to Lipschuts's "law of follicular constancy." Perhaps ovarian resection breaks the fibrous barrier or relieves increased intra-ovarian pressure, thus improving the venous and arterial supply of follicles in a state of arrested maturation. Such a theory has been favored by Hirsch, Jacobsen, and Reynolds.

Perhaps the most important observation in connection with the Stein-Leventhal syndrome concerns the complication of endometrial carcinoma which appears to develop in neglected cases with long histories of trouble. In a comparable series, almost 20% of women less than 40 years of age who had carcinoma of the uterus gave clinical evidence of the Stein-Leventhal syndrome. Sommers and co-workers, Greenblatt, DeVere and Dempster, and Ernst likewise have reported this association. That the relationship is much more than coincidental is evidenced by the fact that 16 of 43 patients had malignant endometrial lesions. It might be well to follow closely patients on whom bilateral wedge resection of the ovary has been performed to ascertain whether this operation prevents fruition of this carcinogenic tendency.

It has been emphasized that granulosa-cell tumors of the ovary are carcinogenic with regard to the endometrium. It could be postulated that the hyperplastic theca interna observed in the ovaries of patients with the Stein-Leventhal syndrome, through elaboration of excessive amounts of estrogen or through uninterrupted elaboration of normal amounts, could have a comparable effect.

Patients suffering from the effects of the syndrome should undergo dilatation and curettage prior to definitive surgical attack on the ovaries. The effect of ovarian resection on possible prevention of uterine malignant lesions in these cases should be appraised further. (Jackson, R. L., Dockerty, M. B., The Stein-Leventhal Syndrome: Analysis of 43 Cases with Special Reference to Association with Endometrial Carcinoma: Am. J. Obst. & Gynec., 73: 161-172, January 1957)

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Carcinoma, Sarcoma, and Melanoma

Today, the dentist is well aware of his responsibility in the diagnosis of cancer. Most dentists recognize suspicious oral lesions, and some take biopsies to ascertain their nature. The discovery of a malignant lesion, however, brings with it the obligation of advising the patient regarding treatment. Here the dentist often fails. He may be in doubt as to the nature and extent of the malignancy. Often valuable time is lost because he hesitates to refer his patient when he is uncertain as to which type of treatment will promise the best result.

The most important decision to be made is whether the patient should be given surgical treatment or irradiation. A combination of the two is rarely advocated today although in selected cases it may be advantageous. Usually, the disease is either amenable to surgery or it may be radio-curable or at least controlled for a time by palliative roentgen-ray treatment.

The following factors should be evaluated carefully and related to the treatment:

1. Type of Malignant Growth. By far the largest percentage of oral malignant growths are the various types of carcinoma. Differentiation must be made, however, between squamous cell, transitional cell, and adenocarcinoma. In addition, great variations in rapidity of growth, cell differentiation, and invasiveness of the tumor cells must be recognized. A carcinoma may be an ulcerating, deeply infiltrating lesion, a verrucous superficially spreading type often associated with leukoplakia or a fungating lesion with an indurated base.

Sarcomas are comparatively rare and they also vary greatly according to histogenesis. The fibrosarcoma is the most common one and occurs as a peripheral tumor on the oral and cutaneous aspect of the jaws. Occasionally, it is seen as a central tumor. The osteogenic sarcoma is an extremely rare tumor which may be osteolytic or osteoplastic or mixed, according to the degree of differentiation of the osteogenic cells and the presence of their by-products. Lymphosarcoma, reticulum

cell sarcoma and plasmocytomas, and multiple myelomas are also uncommon in the mouth and jaws. When they do occur, they are generally found in other parts of the body as well, being either of multiple origin or metastasizing early. A rare, but very malignant, tumor should be mentioned. This is the malignant melanoma which metastasizes to both lymph nodes and the vital organs very early.

2. Rapidity of Growth. The history of the lesion will often give a clue as to the rapidity of growth of a tumor and the pathologist will be able to determine the rapidity of cell multiplication by histologic examination. Rapidly growing tumors invade early and produce metastases while small.

3. Location and Size of Tumor. The location and size frequently govern the curability by surgery. They determine what type of resection is required to eradicate all disease completely.

4. Invasion of Adjacent Structures. The invasion of fascial spaces or adjacent muscles must be considered, and if involved, electrosurgery may be necessary to make sure of complete eradication. This applies particularly to the floor of the mouth.

5. Presence of Metastases. A very important part in the diagnosis of malignant disease is the determination as to whether the lesion is entirely local in nature or whether other organs are involved.

In planning treatment, the choice between surgery or radiation therapy must first be made. It is true that, in many instances, the primary lesion may be effectively controlled by irradiation. However, the complications which frequently arise after irradiation of bone produce deformities much more serious than those caused by radical surgery with the additional handicap that the damaged tissue prevents reconstructive surgery such as may be achieved by the use of bone grafts. Even prostheses cannot be used in some instances because they may cause the breakdown of tissue that has been irradiated. In addition, radiation therapy is generally ineffective in eradicating the secondary lymph node metastases in the neck.

Surgery, therefore, should be the treatment of choice unless contraindicated by the patient's general health. It should always be kept in mind that in cancer surgery complete eradication at the first procedure is the aim. Secondary operations when there is recurrence seldom are successful. (Thoma, K. H., Carcinoma, Sarcoma, and Melanoma: Their Diagnosis and Treatment: J. Oral Surg., 15: 50-56, January 1957)

* * * * *

Occupational Health in the U. S. Navy and Marine Corps

The Navy and Marine Corps have huge industrial organizations. During the fiscal year 1954, there were some 1,400,000 persons in their

land, sea, and air operations. Of this number, about one-third were Naval civil service employees. They were concentrated in large numbers in Naval air stations, ordnance depots, supply centers, and shipyards. An example of this is the New York Naval Shipyard where about 18,000 Naval civil service employees were on duty. The military personnel are used mainly to man the ships. Each ship may be considered, as far as occupational health hazards are concerned, much like any small industrial plant ashore.

Those having top management control of the various Naval industrial type activities, like their civilian counterparts in industrial management throughout the country, are well aware of the importance of maintaining good health and high morale among their personnel. With this in mind, the Navy and Marine Corps have developed in the past 10 to 15 years a comprehensive modern occupational health program for the care of both military and civilian personnel. The program is in full operation in all the larger Naval industrial type activities and to a less extent in smaller stations, depending upon the needs. It consists mainly of occupational medical and industrial hygiene engineering practices and other preventive measures used to protect employees against working environments that may adversely affect health. The program is established to protect the health of not only those engaged in heavy industrial trades, but also those working as executives or holding other key positions.

The rapid technological progress made in Naval industrial activities has brought along new health hazards. Occupational health personnel are heavily taxed in their efforts to prevent and control these conditions. Some of the newer health hazards are the use of new chemicals, such as those in rocket propellants, the use of new hydraulic fluids in elevators and catapults on aircraft carriers, and the use of new fire extinguishing agents. Other new health hazards arise from high-intensity noise created by jet aircraft, micro-waves generated by radar, ionizing radiation resulting from widespread use of radioactive isotopes, and nuclear energy now beginning to be used to propel submarines.

The occupational health programs of the Navy and Marine Corps are under the direction of occupational medical officers. They are responsible under their respective commanding officers who represent top management, for the proper correlation of the various phases of the programs and for conducting them in an efficient and effective manner. The occupational medical officers report directly to top management. This is necessary as the close cooperation and support of top management are essential to conduct successfully an occupational health program. Further, occupational medical officers should have postgraduate training in occupational medicine as it is a varied and extensive service. In all the larger Naval industrial type activities, the occupational medical officers either have had extensive experience due to years of service in the field of occupational health or have had formal postgraduate training in occupational medicine as well as extensive

field experience. Civilian occupational medical physicians are presently being employed in Naval industrial activities to conduct the occupational health program for Naval civil service employees.

The objectives of the occupational health program in the Naval service are the same as those in any large industrial organization in civil life. Some of these may be listed as follows: to maintain a condition of readiness; improve position placement; promote safety of personnel; prevent occupational medical conditions; and maintain and promote the general health of employees. All of these objectives help to promote employee morale and lower production costs.

Industrial health reports for the fiscal year 1954 from 126 Naval establishments show that an average of 1645 Naval civil-service employee patients were seen daily for medical, psychiatric, and surgical conditions—the same conditions that would be found in any large hospital outpatient clinic. In addition to the usual types of patients seen in hospital clinics and elsewhere, the industrial dispensary received large numbers of patients with conditions and diseases which were attributed to their work environment.

The incidence of occupational medical conditions or diseases in the Navy and Marine Corps is low compared with that of nonoccupational conditions. Dermatological conditions had the highest incidence. They were caused mainly by solvents, oils, greases, and explosives. Upper respiratory conditions were next in frequency and were caused mainly by dust, fumes, and organic vapors.

Medical conditions due to chemical agents still are a grave concern to the Naval occupational medical officer and his staff. Most chemical agents are under control, but some well known ones that may cause poisoning, namely, carbon tetrachloride, carbon monoxide, benzene, arsenic, mercury and lead, still continue to be a threat or to cause illnesses among Naval industrial employed personnel unless adequate preventive measures are practiced.

One should proceed cautiously in making a diagnosis of an occupational disease. The fact that a person has been exposed to conditions hazardous to health may be a wrong lead and may act as a mask to the true etiologic agent.

Alert Naval occupational medical officers and their staffs may, by the proper use of known preventive measure, prevent to a large degree diseases due to physical agents, such as decompression, actinic rays, blasts, noise, electricity, motion, heat, and dusts.

Definitive medical treatment is provided for civil service employees for illness or injuries incurred in the performance of duty. This is usually done in well staffed and equipped medical dispensaries in the various Naval activities. The dispensaries are located as close to the majority of personnel on a station as possible in order that they may be in a position to give prompt emergency care and also to conserve on time used by patients in going to the dispensary and returning to their places of employment. If

hospitalization is needed for a service-connected illness or injury, civil service employee patients are usually sent to a United States Public Health Service hospital; If this is not available, any government hospital may be utilized for this purpose or, if necessary, a civilian hospital.

Emergency medical care is rendered for minor nonservice-connected illnesses or injuries until arrangements can be made, if further attention is indicated, to transfer these patients to the care of their family physicians. Every effort is directed toward cooperating and working harmoniously with the patients' family physicians and the local health departments, thereby helping to establish good community relations. Communicable diseases are reported in the usual manner. (Lloyd B. Shone, Captain MC USN, Occupational Health in the U.S. Navy and Marine Corps: Arch. Indust. Health, 14: 543-545, December 1956)
(See Occupational Health Notes for Calendar Year 1955: Preventive Medicine Section)

* * * * *

Lengths of Tours for Medical Officers, Aboard
Ships, and with Marine Corps Fleet Units

Numerous inquiries regarding normal tours of duty at various activities have been received by the Bureau of Medicine and Surgery. Consequently, the following information has been compiled setting forth the normal lengths of tours at the various types of activities:

For Medical Officers, tours of overseas duty shall be considered to be twenty-four (24) months except as indicated below:

<u>Length of Tour</u>	<u>Location</u>
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Twenty-four (24) months	Germany
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Twenty-four (24) months, or	Japan
twelve (12) months after dependents are on station, whichever is longer	

Eighteen (18) months; twenty-four	Guam
(24) months if dependents are on station, or twelve (12) months after arrival of dependents, whichever is longer	Okinawa

Eighteen (18) months; twenty-four	Azores Islands
(24) months if dependents are on station	Morocco (Casablanca and Port Lyautey) Tripoli

<u>Length of Tour</u>	<u>Location</u>
Eighteen (18) months	Korea (Attache) Saipan and Tinian Argentina Poland (Attache)
Fifteen (15) months; twenty-four (24) months if dependents are on station or twelve (12) months after arrival of dependents, whichever is longer.	Taiwan
Twelve (12) months; twenty-four (24) months if dependents are on station, or twelve (12) months after arrival of dependents, whichever is longer.	Vietnam
Twelve (12) months; twenty-four (24) months if dependents are on station.	Kodiak Anchorage
Twelve (12) months; eighteen (18) months if dependents are on station. (If dependents are authorized to join personnel after rotation to more desirable station tour completion date will be extended.)	Adak
Twelve (12) months may be followed by rotation to complete twenty-four (24) months in area.	Korea (To Japan) Kwajalein (To Oahu) Midway (To Oahu)
Twelve (12) months.	Chi Chi Jima Persia Gulf Area Red Sea Area

SHIPS

Twelve (12) to fifteen (15) monthsAll Ships
Twenty-four (24) months for Flight Surgeons and Submarine Medical Officers.

Length of TourLocation

(Reassignment must be within the home port area of the vessel to which the officer is assigned. Officer must have sufficient obligated service remaining to avoid per diem status, except for short periods normally involved in separation processing.)

FLEET MARINE FORCE

Twelve (12) to fifteen (15) months FMF Units in Japan
and Okinawa

Twenty-four (24) months FMF Units in Hawaiian
Area

Twenty-four (24) months FMF Units in Continental
United States

The above tours of duty apply equally to Navy Medical officers attached to Marine Aviation Units and Marine Ground Units. (ProfDiv, BuMed)

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Training Available to Group X Hospital Corpsmen

In view of the tremendous technical advances in medicine and in the sciences allied thereto, it is incumbent upon each member of the Hospital Corps to improve his professional competence. In furtherance of this objective, the Chief, Bureau of Medicine and Surgery, has promulgated to all medical activities two recent BuMed Instructions. These instructions outline procedures by which eligible candidates may request assignment in the Hospital Corps training program. Available courses listed are: 4 under the management control of BuPers, 1 advanced general service school, and 24 BuMed managed schools and courses located primarily at naval hospitals. Application procedures have been considerably modified in that applications are now centralized in the Bureau as contrasted to the former procedure of allocating quotas to administrative commands. Sample application procedures have been included in this instruction. (BuMed Instruction 1510.4B) Applications are desired from eligible hospital corpsmen for all courses of instruction; however, applications are particularly desired for the following:

HM-8403 - Submarine Medicine Technician
HM-8405 - Advanced General Service

HM-8412 - Clinical Laboratory Technician
HM-8452 - X-Ray Technician
HM-8485 - Neuropsychiatry Technician
HM-8493 - Deep Sea Diving Technician
HM-8494 - Physical Therapy Technician

From applications received, the Bureau of Medicine and Surgery will select those hospital corpsmen best suited for technical training. Recommendations made by commanding officers in their forwarding endorsements will be an important factor in the selection process. Evaluations are particularly desired relative to educational background, practical experience in the field requested, studies pursued on a voluntary basis, positive motivation, devotion to assigned duties, and similar factors. When pertinent factors cannot be evaluated for any reason, the endorsement should so state. All requests should be forwarded with appropriate specific recommendations.

Careful observation and evaluation of each prospective trainee will ultimately be reflected in monetary and man hour savings through less time lost from operational duties due to failure of trainees to successfully complete a course of instruction.

Hospital corpsmen in their off-duty hours are also encouraged to take advantage of courses in civilian educational institutions that are directed toward the improvement of the individual's ability to perform Medical Department duties. Defrayment of expenses is contingent upon the availability of funds and is limited to enrollment in courses totaling no more than 6 semester hours at an accredited institution during any one semester. Applications should be prepared in accordance with BuMed Instructions and submitted in time to reach the Bureau of Medicine and Surgery 30 days in advance of the course convening date. For information in addition to the above, consult BuMed Instruction 1510.4B and 1510.7A. (ProfDiv, BuMed)

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From the Note Book

1. Rear Admiral B. W. Hogan, Surgeon General of the Navy, accompanied Dr. F. B. Berry, Assistant Secretary of Defense (Health and Medical), on an eight-day visit to medical facilities in San Juan, Puerto Rico; and Trinidad, British West Indies. (TIO, BuMed)

2. A new training program which will enable Hospital Corpsmen to take advantage of college courses at civilian institutions during off-duty hours was announced recently by the Surgeon General of the Navy. Courses applied for must be conducted by approved and accredited institutions of higher education and the individual must obtain a certificate of acceptance for desired training prior to submitting his request to the Bureau of Medicine

and Surgery for approval. The applicant must have sufficient obligated service to complete the course applied for and the training received must be directed to the improvement of the individual's ability to better his duties in the Navy Medical Department. Requests are to be submitted in the form, and in accordance with, the provisions of BuMed Instruction 1510.7A. (TIO, BuMed)

3. A new activity, the U.S. Naval Reserve Training Command, located at Omaha, Neb., was recently established to supervise the training program of all Naval Reservists except "Air" Reservists. This new field command is under the military command of the Chief of Naval Operations and the management control of the Chief of Naval Personnel. It will function through the Commandants of the Naval Districts and will handle all phases of the training program including its organization and development. (TIO, BuMed)

4. The eighth Annual Symposium on Recent Advances in the Study of Venereal Diseases will be held in the auditorium of the Department of Health, Education, and Welfare, Washington, D. C., April 24 - 25, 1957. The sessions are open to all interested physicians and workers in allied professions. Topics to be discussed will cover many aspects of venereal disease control including basic and clinical research, serology, epidemiology, treatment, program operation, and professional education. (PHS, HEW)

5. The Public Health Service has announced a grant of \$575,000 to evaluate the effectiveness of drugs in treating heart disease. This is the largest research grant of its kind ever made by the National Heart Institute. (PHS, HEW)

6. Two Public Health Service scientists have developed a new device to reduce the cost of adding fluoride, a tooth decay preventive, to city water supplies. Present cost of adding fluoride compounds to drinking water averages 10 cents per person per year in most sections of the country. Development of a new dissolver makes it possible to use fluorspar, the least costly form of fluoride, which can reduce the average cost to 3 cents per person per year. (PHS, HEW)

7. In a review of 26,004 deliveries at the Little Company of Mary Hospital, Chicago, there were 234 sets of twins delivered beyond 7 months gestation. The incidence of toxemia among the mothers was 31.2%. In a further breakdown of statistics, it was noted that 72% of all the primigravid patients bearing twins were toxemic. The fetal loss among these primigravid patients was 8.4%. The over all fetal loss was 4.8%. (Am. J. Obst. & Gynec., January 1957; M. J. Bulfin, M.D., P.E. Lawler, M.D.)

8. Left heart catheterization is an investigation that has much to offer in the accurate diagnosis and study of mitral and aortic valvular disease.

It is a practical procedure which carries a reasonably low risk. Left heart catheterization has been connected with some complications and several of these can be avoided. The authors advise a left heart catheterization only when its diagnostic help is found necessary for the decision of an eventual surgical exploration. A chest surgeon should perform the puncture and he should be equipped to perform a thoracotomy and defibrillation. (Am. Heart J., January 1957; M. Bagger, M.D., et al)

9. The Beck operation for coronary artery disease is the culmination of more than 22 years of research attempts to revascularize the heart by surgical procedures. Impaired coronary circulation can be improved by this operation with relative safety. This improved arterial circulation in the myocardium protects the heart against ventricular fibrillation, reduces the size and incidence of subsequent myocardial infarcts, and alleviates angina. The end result of the Beck operation is an increase in the inter-coronary arterial communications. (GP., January 1957; M. W. Selman, M.D.)

10. Perforated plate tantalum implants are useful in the reconstruction of the orbital floor for the correction of diplopia and the re-establishment of the malar prominence and for the correction of microgenia because they can be contoured accurately and carefully in advance of surgery, and because no postoperative changes in contour occur. (J. Oral Surg., January 1957; Captain R.G. Gerry DC USN, Captain P. J. Giotta MC USN)

11. The early clinical course of 2 children who ingested Clinitest tablets without recognition by the attending physician of the potential damage is described. The resultant structure formation of the esophagus 6 weeks after ingestion of the tablets is demonstrated. This represents an unusual type of lye ingestion. (J. Pediat., January 1957; Captain J. P. Canby MC USA)

12. A review of long-term results in Mediterranean anemia indicates that, although splenectomy does not appear to influence the ultimate outcome of the disease, it may reduce the need for blood transfusions in selected cases, notably those with hypersplenism. (Ann. Surg., December 1956; K. Reemtsma, M.D., H.E. Elliott, Jr., M.D.)

13. A clinical, epidemiologic, and pathologic study of Chagas' Disease appears in Circulation, December 1956; F.S. Laranja, M.D., et al.

14. The literature on localized mesothelioma of the pleura is briefly reviewed and 6 new cases presented. The symptoms, histologic and roentgenographic findings, are described. (Radiology, December 1956; H.C. Blount, Jr., M.D.)

Board Certifications

American Board of Internal Medicine

LCDR Frank M. Bryan MC USN
CAPT Arthur R. Errion MC USN
CAPT Herschel E. Richardson MC USN
CDR George E. Spencer MC USNR (Active)

American Board of Neurological Surgery

LT Bob J. Rutledge MC USNR (Active)

American Board of Otolaryngology

CAPT Louis P. Ballenberger MC USN
CAPT Peter J. Giotta MC USN

American Board of Pathology

LT Eugene W. Landreth MC USNR (Active) (Pathological Anatomy)
LT Alberto Sion MC USNR (Active) (Pathological Anatomy)

American Board of Radiology

LT Marshall W. Olson MC USN

American Board of Surgery

CDR Bruce F. Baisch MC USN
CDR Howard A. Baker MC USN
CAPT Daniel W. Boone, Jr., MC USN
LCDR Carl Ashton Broadus, Jr., MC USN
LCDR Donald J. Doohen MC USN
CDR Alexander C. Hering MC USN
CDR James A. Kaufman MC USN
CAPT Edward W. Pinkham MC USN
CAPT Paul G. Richards MC USN
CDR Charles E. Rogers MC USN
LCDR Edward J. Rupnik MC USN
CAPT George W. Russell MC USN
LT Melvin B. Sullivan, Jr., MC USN

American Board of Preventive Medicine (Occupational Medicine)

CAPT Harry J. Alvis MC USN
CAPT Albert R. Behnke MC USN
CAPT Gerald J. Duffner MC USN
CAPT Oscar Schneider MC USN
CAPT Oscar D. Yarbrough MC USN

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MEDICAL RESERVE SECTION

Social Security Card Needed for Active Duty or Active Duty for Training

The Servicemen's and Veterans' Survivor Benefits Act provides wage credits for active military service toward Social Security benefits for all Naval personnel on active duty or active duty for training on, or after, 1 January 1957. Therefore, all Reservists who report for active duty or active duty for training on, or after, 1 January must have a Social Security card in their possession so that wage credits and deductions may be credited to their accounts.

If you have never had a Social Security Account Number card, or if your card has been lost or destroyed, you should apply for a new or duplicate card at your local Social Security Administration Office.

If you are a member of a drilling unit—whether pay or nonpay—you should have the Social Security Account Number entered in your official personnel records.

If you are not a member of a drilling unit you will be required to present your Social Security card when reporting for active duty or active duty for training so that the account number may be noted in your record. Additional information may be found in BuPers Instruction 1741.9.

(The Naval Reservist, December 1956)

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Reserve Selection Board Schedule - Fiscal Year 1957

The promotion zones and tentative convening dates for selection boards to consider eligible Naval Reserve Medical Department officers for promotion during fiscal year 1957 are shown in the following tables:

(Note: The promotion history of the junior officer in the promotion zone is shown in Table I. Officers whose date of rank in the present grade is earlier than the date of rank shown may ignore dates of rank in lower grades. Officers who have a date of rank in present grade the same as the date of rank shown must also have a date of rank in each succeeding lower grade equal to, or earlier than, the dates of rank shown.)

TABLE I

PROMOTION ZONES AND CONVENING DATES OF SELECTION BOARDS-FISCAL 1957

	RADM (Dental Corps only)	For promotion to CAPT	CDR	LCDR	LT
Tentative convening dates:					
LINE		1-15-57	1-15-57	3-12-57	4-23-57
STAFF	10-09-56	2-19-57	2-19-57	4-30-57	6-04-57
Date of rank as:	Promotion Zones				
CAPT	3-25-45				
CDR	6-22-38	7-22-48			
LCDR	6-30-42	3-15-44	4-01-53		
LT	6-03-37	6-15-42	11-01-44	5-01-52	
LTJG	x x x x x (No class standing)	6-01-42 (No class standing)	8-01-43	11-02-48	12-31-54
ENS	x x x x x (No class standing)	6-01-39	x x x x x (No class standing)	11-02-45 (Class stand- ing 0.2313)	x x x x
Promotion Zones - Wave Officers					
LCDR			7-01-53		
LT			x x x x x	7-01-53	
LTJG			x x x x x	x x x x x	12-31-54
ENS			x x x x x	x x x x x	x x x x x

If you are a Reserve Medical Department officer in the grade of lieutenant (junior grade) or above, within the promotion zones shown in Tables I and II, you will be considered for promotion if you are:

- A TAR officer on active duty (XXX7) designator; or
- On active duty but have not been considered by an active duty board in fiscal year 1957; or
- An inactive Reserve officer in an active status who has earned 12 retirement points during fiscal year 1956 and—with the exception of

captains and warrant officers—who has, prior to 1 July 1956, earned one-half of the required number of promotion points; or

A woman Reserve officer on active duty (excluding Nurse Corps).

TABLE II

1 JUL 1955 REGISTER NUMBERS OF JUNIOR RESERVE OFFICERS ELIGIBLE

Designator	For Promotion to				
	RADM	CAPT	CDR	LCDR	LT
	Register Numbers of Junior Officers				
2105	None	1247	1326	2334	*
2205	4	219	1265	1613	*
2305	None	None	157	260	345
	Register Numbers of Wave Officers				
2105			6	21	4
2305			13	60	35

*See Table I - junior man not in 1955 Register as LTJG.

Note. - Where no register number is listed, no selection board is scheduled.

Reserve warrant officers will be considered for promotion by selection boards which will convene on 14 May 1957. To be eligible for consideration for promotion, warrant officers must have earned 12 retirement points during fiscal year 1956 and, on 30 June 1958, have completed the following number of years' service in present grade: W-1 to W-2, three years; W-2 to W-3, six years; and W-3 to W-4, six years.

Officers of the Nurse Corps Reserve are eligible when they are senior to the junior officer of the same grade of the Nurse Corps on active duty on a lineal list who has been selected for promotion. Therefore, promotion zones for Reserve officers in the Nurse Corps will be established when the fiscal year 1947 lineal list selection boards have been approved for Nurse Corps officers.

All officers who are within the 1957 promotion zones should make sure that their fitness reports for training duty, annual fitness reports, and annual qualification questionnaires are up to date. These reports must cover the periods ending before the convening date of their selection board.

Reports must reach the Chief of Naval Personnel in time to be included with the officers' records when presented to the appropriate selection boards.

Special fitness reports are not required. However, any officer eligible for consideration for promotion may forward a letter through official channels bringing attention to any matter of record concerning himself which he believes important to his consideration. This letter must arrive no later than the convening date of the selection board. It may not criticize or reflect upon the character, conduct, or motive of any officer.

Further information may be found in BuPers Notice 1412, dated 22 Oct. 1956. (The Naval Reservist, December 1956)

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SUBMARINE MEDICINE SECTION



Diving Casualty Case Studies - Case No. 13

Case No. 13

This Japanese diver, wearing a deep sea outfit breathing air, made six dives to depths between 125 and 150 feet. Each dive was 6 to 10 minutes in duration. He was doing salvage work on a wreck. After surfacing from the last dive, he felt pain in his chest so was placed back in the water to 52 feet for eleven hours.

Comment

In view of the uncertainties regarding depth and length of dive, there is no way to estimate just what decompression should have been used. A single short dive to these depths might be within the "no decompression required" curve, but the rule of totaling time of dives and decompressing for this total on each successive dive that day was totally ignored as was the general practice of one dive in twelve hours (Art. 833).

Second day: The diver had numbness in his arms and legs as well as pain in the chest. He was placed in the water to a depth of 71 feet and left there for eleven hours. His arms and legs gradually became paralyzed.

Comment

Decompression in the suit in the water as tried on the first and second days is an old practice and may be used when no recompression chamber is available. However, depths of 52 and 71 feet are not regarded as adequate depths for treatment in Navy diving practice. The rule of "never less than 100 feet for less than 30 minutes for treatment" was appropriate here (Art. 854 (2)). On the basis of available information, one cannot guess what the reported pain in the chest represents. The numbness in the arms indicates central nervous system involvement.

Third day: The diver was placed in the water at 39 feet for ten hours. During this attempt at treatment the condition of the arms improved, but he began to have pain in the back. Spinal cord involvement?

Fourth day: The diver was placed in the water at 39 feet for nine hours. At the end of this time he had frequent desire to urinate but difficulty in voiding was experienced. The back pain had become severe. There was pain in the soles of both feet. Definitely spinal cord involvement.

Fifth day: The diver was placed in the water at 39 feet for eight hours without any relief in the symptoms. An injection of 7% sodium bicarbonate solution (40 cc) was given. No indication of the rationale used here.

Sixth day: The diver was given another injection of sodium bicarbonate solution.

It was noted that during all this period while the diver was on the surface he was kept warm by placing him in the ship's baking oven used for baking fish.

A USN submarine rescue vessel (USS COUCAL) had been dispatched to the scene on a mercy mission. When the diver was brought aboard the rescue vessel, he was paralyzed in both legs and the right arm; the skin over the abdomen was numb. He was conscious, able to talk, but in severe pain.

Treatment in the ship's recompression chamber was started. At 10 feet of depth, the diver could move his right arm and the pain was considerably reduced. At 165 feet, he could move his right arm normally. After 105 minutes at 165 feet, he could move his left leg normally and could twitch the muscles of his right leg.

In this instance, in view of the severity of the condition, it was decided to use the variation of treatment by which helium oxygen mixtures are employed for part of the time under treatment. This diver was treated by the schedule of Table Four between 2155 on 13 November and 1212 on

15 November. He breathed helium-oxygen for the first half of the time spent at the treatment stops at 165, 60, 50, 40, 30, 20, and 10 feet.

During the treatment period, the patient was unable to control his bladder until he regained partial control during the 10-foot stop. He was able to move his right leg during the 50-foot stop and thereafter. On surfacing, the patient had recovered complete use of his arms and legs. There was some residual numbness of the skin over the lower abdomen. The diver was very weak. It is believed he had eaten nothing from the time of his initial attack until he was in the recompression chamber five days and eight hours later.

Comment

The repeated dunkings of the diver represent the best they knew how to do under the circumstances. Deeper depths were required to give adequate treatment. Although placing him under some pressure may have made him slightly more comfortable while there, it also saturated his body further with nitrogen and may have made his condition worse when he was surfaced. The golden moment of opportunity was the first attempt at treatment on the day he made his dives. Had he been lowered to a deeper depth and brought to the surface according to a tried schedule of treatment, it is probable his symptoms might have been relieved.

Congratulations to COUCAL divers for a fine demonstration of diving knowledge!

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DENTAL



SECTION

The Dependents' Medicare Act - Dental Care

The Dependents' Medicare Act, passed by the 84th Congress, went into effect on December 7, 1956.

SecNav Instruction 6320.8 of 5 November 1956 promulgates policies and procedures for administering the medical and dental care programs for dependents of active and retired personnel of the uniformed services. Under the Medicare Act, routine dental care is authorized for dependents

of military personnel at Navy dental activities outside the continental United States. The rendering of routine care by Navy Dental officers for dependents within the continental United States is not authorized except in such remote areas as may be specifically designated by the Secretary of the Navy upon approval of the Secretary of Defense.

Where specifically authorized, routine dental care including general operative, surgical, and prosthodontic treatment, may be provided by Navy Dental officers for dependents on the same level as care furnished to active duty members of the uniformed services. Orthodontic treatment is not considered routine dental care because it is not authorized for active duty personnel.

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Training for Inactive Reserve Dental Officers

The U.S. Naval Station, Treasure Island, San Francisco, Calif., will conduct a one-week course in Special Weapons, Isotopes, and Professional Subjects during the period February 25 through March 1, 1957.

This course has been established primarily for Reserve Medical and Dental officers of the Armed Forces on inactive duty, and presents an up-to-date review of problems and information related to various medical aspects of special weapons and radioactive isotopes with primary emphasis on their application to military and Navy dentistry and civil defense.

Naval Reserve Dental officers on inactive duty in the Eleventh, Twelfth, and Thirteenth Naval Districts who desire to attend this course should submit their requests to their Commandants for appropriate active duty for training orders at the earliest practicable date. Officers attached to pay units of the Naval Air Reserve should submit their requests to the Chief, Naval Air Reserve Training. A quota for attendance at this course has been assigned to each of these commands.

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Dental Panels at the Surgeon General's Symposium

The following agenda composed the program for the dental panels of the Surgeon General's Symposium which was held at the National Naval Medical Center, Bethesda, Md., January 23 - 25, 1957.

Wednesday, Jan. 23, 1957 Professional and Training Problems
1:45 - 4:00 p.m.

Moderator - CAPT B. H. Faubion DC USN
Members - CAPT A. R. Frechette DC USN
CAPT R. D. Wyckoff DC USN

Thursday, Jan. 24, 1957

8:30 - 11:30 a.m.

Dental Personnel Problems

Moderator - RADM R. W. Malone DC USN
Members - CAPT J. V. Westerman DC USN
LCDR S. A. Woods MSC USN
CHIDENTSERWRT P. A. Allers USN

1:30 - 3:00 p.m.

Reserve Problems

Moderator - CAPT B. H. Faubion DC USN
Members - CAPT C. M. Wheeler DC USNR
CAPT J. V. Westerman DC USN
LCDR S. A. Woods MSC USN

3:00 - 4:30 p.m.

Problems in the Marine Corps and in Research

Moderator - CAPT B. H. Faubion DC USN
CAPT L. M. Smylie DC USN
CAPT W. E. Ludwick DC USN

Friday, Jan. 25, 1957

8:00 - 11:00 a.m.

Planning, Facilities, Material and Finance
Problems

Moderator - RADM R. W. Malone DC USN
Members - CAPT G. R. Shaver DC USN
CAPT J. T. Mudler DC USN
CAPT H. K. Rendtorff DC USN
CAPT R. C. Shaw DC USN

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Change of Address

Please forward requests for change of address for the News Letter to:
Commanding Officer, U.S. Naval Medical School, National Naval Medical
Center, Bethesda 14, Md., giving full name, rank, corps, and old and new
addresses.

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The printing of this publication has been approved by the Director of
the Bureau of the Budget, 16 May 1955.

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PREVENTIVE MEDICINE SECTION

Suspected Pesticide Poisoning Case

The September 1956 report of the U.S. Navy Disease Vector Control Center, Jacksonville, Fla., points out the dangers of using some of the newer pesticides without proper training. Some abstracts of the report are given here.

A civilian employee of a Naval activity called the Center alleging that he was experiencing symptoms of pesticide intoxication. He asked if the Center was interested in performing clinical laboratory tests. (The duties of the 57-year old male employee had no connection with the pest control program.)

It was learned that a few days prior to the call he had worked in his private greenhouse for 2 hours spraying plants with the insecticide, malathion. Allegedly, all safety precautions recommended by the Florida State Board of Health—including the use of a locally purchased half-mask respirator—had been observed.

The symptoms described were typical of those produced by the organic phosphorus insecticides. The symptoms which included nausea, abdominal cramps, blurred vision, and diarrhea persisted to some degree for about 2 weeks. No difficulty was experienced thereafter in the absence of treatment and withdrawal from further use of the pesticide. This same individual had experienced similar toxic reactions earlier in the year when he used parathion (a much more toxic organic phosphorus compound) in his greenhouse.

Inquiries made of the laboratory facilities of the local Naval medical activities revealed that equipment was not available for the determination of blood cholinesterase levels. The civilian employee reported initial difficulty in finding civilian medical facilities and physicians who were familiar with symptoms and diagnosis of organic phosphorus insecticide intoxication and from whom treatment could be obtained. On further local inquiry, he found three physicians and one civilian hospital able to make necessary tests and prescribe treatment.

Further questioning of this individual revealed the following three facts which possibly account for the toxic reaction reported:

1. The filter cartridges in the respirator had been used repeatedly over a long period without replacement.
2. In checking the respirator prior to replacing the parts and applying the insecticide, the felt pad located behind the filter cartridge had become crimped allowing a free flow of droplets.
3. While mixing the spray material, malathion concentrate was spilled on the hand and arm and was not washed off until several hours later.

This case is cited as a practical example of the care and basic precautions which must be taken by Navy and other pest control personnel if needless pesticide poisoning is to be avoided. It is to be noted that the material referred to in this instance is relatively one of the safest of the organic phosphorus compounds to use. At the same time, it points to a possible need for increased awareness of the potential problem on the part of Naval Medical officers and Medical Department personnel as well as more adequate laboratory and treatment facilities on the part of Naval dispensaries and hospitals.

Plans are presently under way to add malathion to the Navy standard pest control supply list to be used for the control of insects resistant to the chlorinated hydrocarbons (DDT, BHC, lindane, and chlordane). Adequate information for the physician confronted with possible malathion poisoning may be found in the Clinical Memoranda on Economic Poisons (1956) which has been distributed to all Medical Department activities having a Medical Officer attached.

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The 1957 Industrial Health Conference

The 1957 Industrial Health Conference will be held in the Kiel Auditorium, St. Louis, Mo., 20 - 26 April 1957. The conference is jointly sponsored by the American Industrial Hygiene Association, American Governmental Industrial Hygienists, the American Association of Industrial Nurses, the American Association of Industrial Dentists, and the Industrial Medical Association. It is one of the most important educational meetings of the year for personnel employed in the industrial health program of the Navy.

This conference affords unsurpassed opportunity for the presentation and discussion of new problems in the field of industrial health which have arisen incident to rapid technological progress. Preliminary information received from the program planning committee indicates that this will prove to be an outstanding conference. Recognized leaders in the field of industrial health will be present representing major private industries in the United States and Canada. There will be discussions of mechanisms believed to be

most effective in carrying out preventive health measures dealing with preplacement and periodic physical examinations, radiation hazards, sight conservation, hearing conservation, and industrial toxicology. All of these mechanisms are applicable in lowering the over all cost of industrial production and in maintaining a condition of readiness in the Navy. In order to have an adequate and progressive industrial health program in the Navy, it is considered highly desirable that Naval and civilian personnel concerned with the Naval industrial health program attend this conference. Such participation is particularly pertinent at this time when an effort is still being made to integrate more civilian physicians into the Navy's industrial health program and to maintain and improve the present low rates of industrial sickness and accidents.

It is highly recommended that industrial medical officers, industrial hygienists, and industrial nurses attend this important conference. Attendance of any one individual will be contingent on the extent to which his activity can spare him and the availability of per diem funds. Since this conference is sponsored primarily by nonfederal organizations, orders for attendance must be processed in accordance with SecNav Instruction 4651.8A of 4 November 1955. For this reason, applications for orders should be processed at an early date.

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The Courts Look at Fluoridation

Throughout the history of the United States, the courts have played a great role in the molding of public opinion and in the evolution of administrative practice. In no area of public significance have the judgments of the courts had a greater impact than in the field of public health. It is not surprising, therefore, that once more judicial opinion is paving the way fairly rapidly for the use of water fluoridation as an important and acceptable public health measure.

James A. Tobey has recently performed a great public service by summarizing the present status of court opinion in this highly debated area. A succinct epitome of his findings is best stated in the opening paragraph of his survey, as follows:

"Proper fluoridation of public water supplies does not infringe the constitutional rights of individual citizens. This principle is now well established in American jurisprudence. Between 1953 and the end of 1955, the Supreme Court of the United States and the courts of last resort in six states have ruled that this procedure is a valid and reasonable exercise of the police power of the State in the interests of the public health, and that it does not violate any of the rights of individuals vested in them by the Federal and State constitutions."

The unanimity of court opinion has been astonishingly complete, considering not only the number of cases already adjudicated, but the spectrum of issues raised in the religious, the pseudoscientific, and the political fronts. Patterns of opposition have been likewise uniform in character and not infrequently stimulated by well financed national groups. Virtually without exception, the courts have considered the objections invalid and undue interferences with decisions of high public health import.

Since 1952, the date of first court opinion, favorable decisions are at hand from San Diego, Baltimore, Northampton, Fargo, Chehalis, Cleveland, Tulsa, Bend, Greenville, and Milwaukee. In Shreveport, an injunction against fluoridation was later reversed by the Supreme Court of the State of Louisiana.

In general, Tobey points out the courts have made clear that fluoridation is of great importance and beneficial to all citizens; that "such a measure was not arbitrary or unreasonable, not medication, not adulteration, not class legislation, and not in violation of any constitutional privilege, including religious freedom."

Tobey, long a student of public health law and the author of some of the few authoritative texts thereon, adds the significant comment that:

"Whenever the exercise, or alleged exercise, of the vested right of religious freedom has come in conflict with public health laws and procedures, which likewise have a solid constitutional basis, it is the public health which invariably has prevailed and in the nature of things must always prevail. Fluoridation of municipal water supplies not only is now an accepted and established scientific procedure, but it is sanctioned by the law of the land."

(Editorial, The Courts Look at Fluoridation: Am. J. Pub. Health, 46: 1577-1578, December 1956)

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Danger in Entering a Non-Ventilated Compartment

Recently, an enlisted man, working alone and without respiratory protection, descended about five feet into the valve compartment above an underground gasoline storage tank. There he removed the tank cover and took a sounding. He remembers noticing heavy vapors while completing the sounding and while preparing to ascend the ladder from the compartment. A short time later he was found lying unconscious on the floor of this compartment by a Marine sentry. In attempting to remove the stricken man, the sentry was partially overcome, but managed to climb out and secure assistance. Prompt medical attention, including artificial respiration started at the scene, prevented a fatality.

The circumstances of this accident are significant in that the investigation disclosed the following: (1) The compartment was not ventilated or tested before entry; (2) No respiratory protection was used; (3) The man was working alone with no standby, watcher, or means of communication in the event of an emergency; (4) The sentry almost became a second victim by attempting a rescue without proper protection.

To prevent further accidents of this type, supervision should insure that:

1. No person shall enter any closed compartment or poorly ventilated space in any Naval or Navy operated vessel or activity until tests have been made to assure that such compartment or space has been found "gas free" and that there is no lack of oxygen. If these tests indicate the presence of toxic or flammable vapors or a lack of oxygen, no personnel shall be permitted to enter the space until these hazards have been eliminated.

2. Whenever there is the slightest doubt as to the presence of toxic gas or lack of oxygen, personnel entering a void space shall be required to wear an approved rescue breathing apparatus. Personnel should have a safety line attached and should maintain direct communication with an alert tender remaining outside. (NavBase GTMO Notice 5100, 26 Nov 1956)

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Occupational Health Notes for Calendar Year 1955

During the calendar year 1955, over 400,000 civil service employees were employed in various Naval shore-based activities, mainly industrial type facilities, such as air stations, supply centers, ordnance depots, and shipyards.

Emergency care for on-the-job illness and injury (not service connected) is provided after which prompt arrangements are made for further medical care by the employee's private physician. In an effort to reduce lost time due to these illnesses, medical services are made available for minor ailments which can be relieved by limited treatment or advice.

Of the more than 560,000 patients treated, approximately one out of five (or 109,000) was an occupational illness. Ninety-eight percent of these were due to trauma and 2% due to occupational medical conditions.

The Bureau of Employees' Compensation Federal Work Injuries Report on accidental injuries sustained during the calendar year 1955 lists the following as the three leading causes of compensable accidents in the Navy:

1. Handling material or equipment
2. Falls of persons
3. Striking against material

The occupational medical conditions were due mainly to the following:

1. Oils, greases, and solvents causing various degrees of contact dermatitis
2. Dust, fumes, and vapors producing various types of respiratory tract pathology
3. Actinic rays, produced during welding operations, causing acute conjunctivitis

The Federal Bureau of Employees' Compensation expenditures for Naval civilian personnel increased \$836,856.00 in 1955, making a total cost of \$4,342,701.00. (Lloyd B. Shone, Captain MC USN, Preventive Medicine Division, Bureau of Medicine and Surgery)

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Staphylococcal Infections in Nurseries for the Newborn

The Ohio Department of Health has reported two outbreaks of staphylococcal infections in nurseries for the newborn in different hospitals. In one, there have been 25 postpartum breast abscesses in mothers, 16 breast abscesses in babies, 8 cases of staphylococcal pneumonia in infants, and numerous cases of superficial and deep abscesses in infants and adults. Staphylococcus aureus, phage type 42B/44A/47C/52/81, has been obtained from 7 of 8 cases of pneumonia, 6 of 8 postpartum breast abscesses, and 4 of 5 infant breast abscesses cultured.

Repeated culturing of the nursery staff has revealed that 35% of the staff of the premature nursery and 11% of the full term nursery staff are nasal carriers of this organism. The organism was apparently introduced into the nursery some time during late April or early May 1956, and infection continued until antibiotic prophylaxis was introduced on August 1.

In the other hospital, 82 babies were delivered during June, July, and August, 1956. Staphylococcus aureus, phage type 52A, has been obtained from 4 of 5 postpartum breast abscesses which occurred in mothers during these months. The same organism has been obtained from 7 of 9 cultures from infants who developed pustular dermatitis or subcutaneous abscess. This organism is sensitive to aureomycin, bacitracin, chloramphenicol, dihydrostreptomycin, erythromycin, and penicillin. (Excerpt: Morbidity and Mortality Weekly Report, National Office of Vital Statistics, Department of Health, Education and Welfare, 5: 44, 9 November 1956)

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Health Program for Civil Service Employees

A new chapter in the Manual of the Medical Department has been approved—Chapter 26. This chapter is entitled Health Program for Civil Service Employees and will be incorporated in the next change to the Manual due for release in April 1957.

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